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**REMARKS**

**Claims in the Application.** Claim 46 has now been cancelled from this application. Accordingly, Claims 1-25 and 36-45 are active in this application. Reconsideration is respectfully requested.

**Interview of October 25, 2006.** Applicants' attorney wishes to thank Examiner Pezzuto for the most helpful interview extended on October 25, 2006. At this interview, Paul Javora and Qi Qu (co-inventors of the application), Margaret Kirick (Chief Intellectual Property Counsel for the assignee) and the undersigned attended. At the interview, the scope of the invention and the distinctions between the pending claims of the application and the cited prior art were discussed, as summarized below.

**Scope of the Invention.** The claimed invention of Applicants is directed to a thermal insulating composition of a water-superabsorbent polymer, viscosifying polymer and water and/or brine. The water-superabsorbent polymer is capable of absorbing a minimum of its own weight in water.

Thermal insulating compositions are used to control undesired heat loss from production tubing or heat transfer to an outer annuli. Depicted below is a top view of a wellbore schematic wherein the three concentric circles or casings represent pipes or tubes. In operation, once a well is completed, thermal insulating fluid is pumped into the wellbore down area A and returns into annulus B. ("A" becomes the production area of the wellbore.) Annulus B is then closed at the bottom, through a mechanical valve, as well as at the top. Thermal insulating fluid does not enter the reservoir formation during this process. (Annulus C represents the cemented inner casing, which becomes a heat sink.)



The presence of the thermal insulating fluid in annulus B prevents undesired heat loss from the production area A to C. Hydrocarbon fluid is therefore produced from the

production area A with minimal heat transfer to C.

Thermal insulating compositions must therefore be pumpable. The presence of the water-superabsorbent polymer in the thermal insulating composition locks up or eliminates free water which, in turn, controls convection. The superabsorbent-containing insulating composition claimed by Applicants has improved insulation over a corresponding insulating composition which does not contain a superabsorbent.

**Examiner's Rejection Under 35 U.S.C. § 103(a).** The Examiner has rejected Claims 1-25, 30 and 36 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,502,082 ("*Unger*"), U.S. Patent No. 5,965,651 ("*Ishii*"), U.S. Patent No. 6,908,886 ("*Jones*") and U.S. Patent No. 5,077,336 ("*Nakashita*"). This ground for rejection is traversed.

*Unger* discloses a process of making a crosslinked porous solid. The hydrogel of *Unger* is *not* a superabsorbent. Instead, the solid crosslinked porous absorbent body of *Unger*, derived from the hydrogel, is the superabsorbent. Note that the gelling agent functions as the crosslinking agent and the gelling agent is added to the hydrogel in order to form the crosslinked polymer which, in turn, when dried, is the superabsorbent. Note col. 5, l. 65 through col. 6, l. 29-30 of *Unger* wherein it is noted that the gelling agent "is reactive with the polymer to set or coagulate the pregel" (emphasis added). Thus, the absorbent material in *Unger* is the final reaction product of pregel and crosslinking agent; the hydrogel serving as a building block to make the porous solid. The solid absorbent is used to make such products as wall panels having insulation qualities (col. 12, ll. 31-41) wherein the hollow matrix (capable of entrapping air) renders the requisite insulation.

Unlike the solid absorbents of *Unger*, the thermal insulating composition of Applicants is a pumpable liquid which contains a superabsorbent. The claims of Applicants recite a viscifying agent in combination with the water-superabsorbent polymer. *Unger* only discloses a process of making a solid superabsorbent. *Unger* does not disclose a thermal insulating composition of a viscifying agent and superabsorbent. Further, in order to be pumpable, the claims of Applicants also recite water and/or brine. *Unger* is not directed to a pumpable composition. Thus, the thermal insulating composition defined in Applicants' claims is not disclosed in *Unger*.

*Ishii*, like *Unger*, discloses a process of making an absorbent material. The

Examiner relies upon lines 26-59 of column 16, lines 3-20 of column 21 and the working Examples to support her rejection that *Ishii* discloses the combination of superabsorbent polymer and viscosifying polymer. A clear reading of the cited passages (and the remaining portions) of *Ishii* illustrates that such materials are used to make the "liquid-absorbing material composition", as referenced in the Examples.

In fact, claim 1 of *Ishii* more clearly states the invention to be "a composition for preparing a liquid-absorbing material". This composition contains a crosslinking agent, copolymer, water, organic solvent and plasticizer. The Examples further indicate that the liquid-absorbing material is not the composition but rather is the molded product. Note, for instance, that the "liquid-absorbing material composition" of claim 1 of *Ishii* is illustrated by Examples 1-7 while Examples 8-14 are directed to forming a molded product from such compositions which, in turn, exhibit "liquid absorption magnifications". See, col. 24, ll. 1-7. Thus the liquid-absorbing material of *Ishii* is not the "liquid-absorbing material composition" described in col. 2, l. 64 through col. 4, l. 61 but is rather the molded product. Note further claim 12. *Ishii* does not disclose the addition of a viscosifying polymer and water or brine to the absorbent molded product. Thus, *Ishii* does not disclose the combination of water-superabsorbent polymer, viscosifying polymer and water and/or brine as claimed by Applicants.

*Nakashita* discloses a composition containing a plasticizer, water-soluble or absorbing gel and polyvinyl chloride. An emulsifier is further required in order to properly mix the water-soluble gel or suspension and polyvinyl chloride. The resulting product is a flexible rubber which is capable of retaining its shape. Thermal insulating compositions, as stated *supra*, must be pumpable and clearly could not behave like rubber. In any event, the composition of *Nakashita* does not disclose the combination of a water-absorbent polymer and a viscosifying agent. At best, the passages relied upon by the Examiner (col. 2, ll. 10-36 and col. 3, ll. 25-39) are directed to the production of a water-absorbing gel or polymer. Note that the "water-soluble polymers" of column 2 of *Nakashita* are used as an alternative to the "water-absorbing high polymer". The combination of water-absorbent polymer and viscosifying polymer is not disclosed, nor suggested, by these passages. Reconsideration therefore is respectfully requested.

Examiner's Objection to Claim 46. Applicants have cancelled Claim 46 from this

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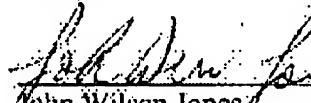
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application. A discussion of the position of the Examiner set forth in paragraph 1 of the Office Action is therefore unnecessary.

**Conclusions.** Applicants request the Examiner to telephone the undersigned should she deem it prudent to expedite the prosecution of this application.

Respectfully submitted,

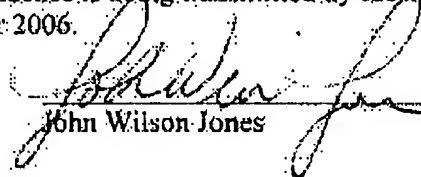
Dated: November 8, 2006

  
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John Wilson Jones